ESTIMATES AND PROJECTIONS AREA DOCUMENTATION STATE POPULATION ESTIMATES BY AGE AND SEX

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BACKGROUND

Each year, The U.S. Census Bureau produces a new set of population estimates for the 50 states and the District of Columbia with age and sex detail. More specifically, these estimates have the following characteristics:

Universes	Resident Population and Civilian Population;
Time	July 1 of each year between the most recent census and the end date indicated in the title of the release
Age	Single years of age from age 0 to age 85 and older
Sex	Male and Female

The following documentation describes the work carried out in the production of the July 1, 2005 vintage of these estimates.

OVERVIEW

The July 1, 2005 vintage of the state population estimates by age and sex detail was produced with the same estimates method that was used during the 1990s

and in the three previous vintages of post-Census 2000 estimates. This method employs two basic techniques:

1. A cohort-component technique with proportional adjustment is used to estimate the civilian population ages 0 to 64. In this method, the population in each age from the most recent census is estimated using the standard demographic formula (Estimated Population = Base Population + Births - Deaths + Net Migration). After this, the population at each age is distributed by sex using the distribution of the cohort that corresponds with the population of that age from the most recent census. Finally, the resulting population is proportionally adjusted to match previously released estimates at the national and state level. Note that this method is applied under the assumption that the population ages 0 to 16 has no Armed Forces and, hence, the resident and civilian populations are the same.
2. A direct administrative records technique is used to estimate the Armed Forces population (ages 17 to 64 by single years of age). In this method, both the size and age-sex distribution of the population are estimated using information from administrative records (e.g., registries of the Armed Forces). These estimates are proportionally adjusted to match previously released estimates at the national level.
3. An administrative records difference technique is used to estimate the population ages 65 and older. In this method, the size of the population by sex and for each single-year of age is estimated by adding the change in the administrative records count (e.g., Medicare enrollment) for that cohort to the original count from Census 2000. These estimates are also proportionally adjusted to match previously released estimates at the national and state level. Note that this method is also applied under the assumption that the population ages 65 and older has no Armed Forces and, hence, the resident and civilian populations are the same.

After these two techniques are applied, the results are combined and proportionally adjusted to controls both at the national level and the state level. At the national level, the results are adjusted to the national resident population estimates by single years of age and sex. At the state level, the results are adjusted to the resident total population estimates by two age groups (0 to 64 years of age and 65 years of age and older).

METHOD DETAIL

STEP 1: Estimating the civilian population ages 0 to 64.

In this technique, the population at each age is estimated using a modified version of the standard demographic formula where the estimated population is

the product of a base population plus births minus deaths plus net migration (equation 1).[1]

(1) $POP_Y = POP_{42000} + BIR_P - DTH_P + NM_P$

Then, the population at each age is distributed by sex using the distribution of the cohort that corresponds with the population of that age from the most recent census. For males, the population is calculated by multiplying the both-sexes population in that cohort by the proportion of the male population in that cohort (equation 2). For females, the population is simply the difference between the both-sexes population and the male population (equation 3).

(2) $POP_{MY} = POP_Y * (POP_{M42000} / POP_{42000})$

and

(3) $POP_{FY} = POP_Y - POP_{MY}$

As currently applied, this is not a cumulative technique - i.e., the estimates for each year of the time series are calculated independently. *Hence, for each time point for which an estimate of the population by age and sex is produced (in this vintage, 7/1/00, 7/1/01, 7/1/02, 7/1/03, 7/1/04 and 7/1/05), separate and independent calculations are made for each base population, number of births, number of deaths, and number of net migrants.*

The specific steps to be used in estimating the civilian population by single years of age (0 to 64) are summarized below:

- **1A. Estimating the Base Populations**

The first step in estimating the civilian population ages 0 to 64 is to estimate the base populations for each estimate time point. This is done by first taking the census population for each state by single years of age and subtracting out the Armed Forces population in that state by single years of age. The data sources for this procedure are as follows:

  - Resident state population by single years of age is from the most recent census as adjusted for changes in geography and modifications due to Census corrections and estimates-challenge;
  - State total Armed Forces population at the census date (station strength) from Armed Forces registries;
  - National resident Armed Forces population by single years of age at the census date from the current vintage of the national estimates.

- State resident births from vital registration and, if needed, projected state resident births.[2]

Using these data, the base populations are calculated by first distributing the state total Armed Forces population by single years of age using the distribution from the national resident Armed Forces population by single years of age (equation 4).

(4) $POP_{AFA(17\text{-}64)42000} = POP_{AFT(17\text{-}64)42000} * (POP_{NaAFA(17\text{-}64)42000} / POP_{NaAFT(17\text{-}64)42000})$

The civilian populations by single years of age are then derived by subtracting the state Armed Forces populations by single years of age (from equation 4) from the resident state population by single years of age (equation 5).

(5) $POP_{CivA(0\text{-}64)42000} = POP_{ResA(0\text{-}64)42000} - POP_{AFA(0\text{-}64)42000}$

Finally, the state civilian base populations by age are adjusted to cohorts. To do this, the age associated with the base populations is changed to reflect the age that those people would be on the estimates dates. For example, for an estimate date of July 1, 2000, it is assumed that 25 percent of the population age 5 on April 1, 2000 will have turned 6 and 75 percent of the population age 5 on April 1, 2000 will still be 5. Similarly, for an estimate date of July 1, 2001, it is assumed that 25 percent of the population age 5 on April 1, 2000 will have turned 7 and 75 percent of the population will be 6. This age transformation is done for the cohorts born before the census year with the following equation:

(6) $CPOP_{CivA2000} = (.75 * POP_{CivA42000}) + (.25 * POP_{Civ(A\text{-}1)42000})$

where

Age for CPOP = Age for POP + (Estimate Year − Census Year) + .25

For the cohorts born during and after the census year, a special process is required. In these situations, those at the youngest ages in each estimate year will not have corresponding populations in the most recent census. For example, for an estimate date of July 1, 2000, those children born between April 1 and June 30, 2000 will not be represented in the cohortized population from the census. Similarly, for an estimate date of July 1, 2001, those children born between April 1, 2000 and June 30, 2001 will not be represented in the cohortized population from the census. To compensate for this, the cohortized base population is supplemented with data on births from the appropriate period as reported in vital registration statistics.

The cohort born in the census year is computed by using this formula:

(7) $CPOP_{CivA42000} = (.75 * POP_{CivA42000}) + (.25 * BIR_{2000})$

Cohorts born after the census year are computed by using this formula:

(8) $CPOP_{CivA42000} = (.5 * BIR_{StP}) + (.5 * BIR_{St(P-1)})$

At the end of these processes, the result is one base population by single years of age for each point in time for which estimates are produced (e.g., for the 2005 vintage estimates, there will be five base populations, one each for the estimates dates of 7/1/00, 7/1/01, 7/1/02, 7/1/03, 7/1/04, and 7/1/05).

- **1B. Estimating the Number of Deaths**

The next step in estimating the civilian population ages 0 to 64 is to estimate the number of deaths for the civilian population in each estimate period. The data sources for this procedure are as follows:

  - State resident deaths by single years of age from vital registration and, if needed, projected state resident deaths by single years of age.[3]
  - Total worldwide Armed Forces deaths;
  - Total national Armed Forces deaths;
  - National Armed Forces by age;
  - State total Armed Forces by current station;
  - State total Armed Forces by pre-service residence.

Using these data, the number of deaths to civilians are calculated by first estimating the number of Armed Forces deaths in each state by single years of age. This is done in the following manner.

7.The total worldwide Armed Forces deaths are distributed to the states using the average of two ratios; the state Armed Forces by station strength to the national Armed Forces, and the state Armed Forces by pre-service residence to the national armed forces (equation 9):

(9) $DTH_{StAFT(17-64)P} = DTH_{WdAFT(17-64)P} * ([POP_{StAFT(17-64)Y}/POP_{NaAFT(17-64)Y}] + [POP_{StPST(17-64)Y}/POP_{NaPST(17-64)Y}])/2$

8.The worldwide Armed Forces deaths distributed to states (from equation 9) are then distributed by age using the age distribution of the national Armed Forces population (equation 10):

(10) $DTH_{StAFA(17-64)P} = DTH_{StAFT(17-64)P} * (POP_{NaAFA(17-64)Y}/POP_{NaAFT(17-64)Y})$

9.The state resident Armed Forces deaths by age are then calculated by multiplying the worldwide Armed Forces deaths distributed to states by age (from equation 10) by the ratio of the total national resident Armed Forces deaths to the total worldwide Armed Forces deaths (equation 11).

(11) $DTH_{StAFA(17-64)P} = DTH_{StAFA(17-64)P} * (DTH_{NaAFT(17-64)P}/DTH_{WdAFT(17-64)P})$

After the number of Armed Forces deaths by single years of age are estimated, they are subtracted from the number of state resident deaths by age to arrive at the number of civilian deaths by state and age (equation 12).

(12) $DTH_{CivA(0-64)P} = DTH_{ResA(0-64)P} - DTH_{AFA(0-64)P}$

Finally, the last step in estimating the civilian deaths by age is to adjust to cohorts and to cumulate the deaths. To do this, the age associated with the deaths for each year is changed to reflect the age that those people would have been on the estimates date. For example, for an estimate date of July 1, 2000, it is assumed that 25 percent of the people age 5 on April 1, 2000 who died before July 1, 2000 would have been 6 by that date and 75 percent of the population would have still been 5. Similarly, for an estimate date of July 1, 2001, it is assumed that 25 percent of the people age 5 on April 1, 2000 who died before July 1, 2001 would have been 7 by that date and 75 percent of the population would have still been 6. This age transformation is done for the deaths occurring each year at each age. Finally, the cohortized deaths for each year are summed by estimate-year age to arrive at an estimate-period sum of the deaths by age for each cohort.

At the end of these procedures, the result is one set of deaths by single years of age for each period for which estimates are produced (e.g., for the 2005 vintage estimates, there will be six sets of deaths, one each for the periods 4/1/00 to 6/30/00, 4/1/00-6/30/01, 4/1/00-6/30/02, 4/1/00-6/30/03, 4/1/00-6/30/04, and 4/1/00-6/30/05).

- **1C. Net migration**

The third step in estimating the civilian population ages 0 to 64 is to estimate the net migration for the civilian population in each estimate period. In this step, the

net migration for the populations ages 0 to 16 and 17 to 64 are estimated separately.

1C1. Net migration for the population ages 0 to 16

The data sources for estimating the net migration for the population ages 0 to 16 are as follows:

- Population by single years of age from the most recent census (reference date = 4/1/00);
- State deaths by month and age from vital registration for the estimate period and, if needed, projected state deaths by month and age.[4]
- School enrollment counts by grade (1 to 8) for each year of the estimate cycle.

The net migration for this population is then calculated in the following manner:

3. We first calculate a correction factor for the school enrollment data by state. This is done by dividing the estimate of the population ages 6.5 to 14.5 in the census year by the estimated population ages 6 to 14 (grades 1 through 8) from school enrollment (equation 13). An assumption made in this calculation is that the school enrollment figure reflects the size of this population at midyear (July 1).

(13) $CF_{SE} = POP_{T(6\text{-}14)42000} / SE_{T(6\text{-}14)2000}$[5]

4. An estimate of the population ages 6.5 to 14.5 as of July 1 of each estimate year is calculated by applying the correction factor (from equation 13) to the school enrollment counts (grades 1 through 8) for the estimate year (equation 14).

(14) $POP_{T(6\text{-}14)Y} = SE_{T(6\text{-}14)Y} * CF_{SE}$

5. An estimate of the expected population ages 6.5 to 14.5 for each state as of July 1 of each estimate year under the assumption of no migration during the period is calculated by taking the corresponding population from the census in that state and subtracting the number of deaths to the population of these ages as reported in monthly vital statistics (equation 15). Note that this procedure tracks the change in each cohort with techniques similar to those described above for the base population and deaths components.

(15) $POP_{NoMigT(6\text{-}14)Y} = CPOP_{A(6\text{-}14)42000} - CDTH_{T(6\text{-}14)P}$

6. The net migration for each estimate period for the population ages 6.5 to 14.5 as of the estimate year is calculated by subtracting the corresponding

expected population (from equation 15) from the estimated population (from equation14) (equation 16).

(16) $NM_{T(6\text{-}14)P} = POP_{T(6\text{-}14)Y} - POP_{NoMigT(6\text{-}14)Y}$

7. The estimate-period net migration (from equation 16) is distributed to the population ages 0 to 16 in the estimate year using the age-proportions from the last census (equation 17). Note that the assumption is that the estimates of net migration originally for only the population ages 6 to 14 are assumed to apply to the entire population ages 0 to 16 in each state.

(17) $NM_{A(0\text{-}16)P} = NM_{T(6\text{-}14)P} * (POP_{A(0\text{-}16)42000}/POP_{T(0\text{-}16)42000})$

1C2. Net migration for the population ages 17 to 64

The next step in estimating the net migration for the civilian population by age for each estimate period is to calculate the net migration rate for the civilian population ages 17 to 64. The data sources for this procedure are as follows:

- The net migration for each estimate period for the population ages 6.5 to 14.5 as of the estimate year;
- Resident population by single years of age from the most recent census (reference date = 4/1/00);
- State deaths by month and age from vital registration for the estimate period;
- The estimate of net migration for the population 6.5 to 14.5 for each estimate period from step (1) above;
- Migrants for each state by age (6-14 as a group and 17-64 by single years of age) from the 5-year question from the last census.

The net migration rate for this population is calculated as follows:

13. Calculate an estimate of the state populations ages 6.5 to 14.5 (as of July 1 of each estimate year) for the midpoint of each estimate period (equation 18). The midpoint of each estimate period is calculated by determining the duration between April 1 of the census year and the reference date of the estimate, dividing by 2, and then adding that duration to the base. For example, the duration between 4/1/00 and 7/1/03 is 3.25 years, so the midpoint of that period is 1.625 years after 4/1/00 or approximately 11/15/01. The estimated population as of that date is calculated by taking the corresponding population from the census in that state, cohortizing it, and then subtracting one-half the number of cohortized deaths to the population of these ages as reported in monthly vital statistics. Note again that this procedure tracks the change in each cohort with techniques similar to those described above for the base population and deaths components.

(18) $POP_{MidPeriodT(6\text{-}14)Y} = CPOP_{T(6\text{-}14)42000} - (½ * CDTH_{T(6\text{-}14)P})$

14. The migration rate for the population ages 6.5 to 14.5 for each estimate period is calculated by dividing the migration for the estimate period by the estimate of the mid-period population (from equation 18) (equation 19).

(19) $NMR_{T(6\text{-}14)P} = NM_{T(6\text{-}14)P}/POP_{MidPeriodT(6\text{-}14)Y}$

15. An estimate of the state total populations ages 6.25 to 14.25 (as of the census date) and the state population ages 17 to 64 by single years of age (as of the census date) for the midpoint between the census date and five years prior is calculated by subtracting one-half the number of migrants in the last 5 years of that age as reported in the census from the census population of that age (equations 20 & 21).

(20) $POP_{MidPeriodT(6\text{-}14)1995\text{-}2000} = POP_{T(6\text{-}14)42000} - (½ * NM_{T(6\text{-}14)1995\text{-}2000})$
(21) $POP_{MidPeriodA(17\text{-}64)1995\text{-}2000} = POP_{A(17\text{-}64)42000} - (½ * NM_{A(17\text{-}64)1995\text{-}2000})$

16. The annual net migration rate for the state total populations ages 6 to 14 and the state populations ages 17 to 64 by single years of age for the 5 years prior to the most recent census is calculated by dividing the number of migrants in the last 5 years of that age as reported in the census by the estimated midpoint population (from equations 20 and 21) and dividing by 5 (equations 22 and 23).

(22) $NMR_{T(6\text{-}14)1995\text{-}2000} = (NM_{T(6\text{-}14)1995\text{-}2000}/POP_{MidPeriodT(6\text{-}14)1995\text{-}2000})/5$
(23) $NMR_{A(17\text{-}64)1995\text{-}2000} = (NM_{A(17\text{-}64)1995\text{-}2000}/POP_{MidPeriodA(17\text{-}64)1995\text{-}2000})/5$

17. An initial correction factor for the migration rate for the population ages 17 to 64 by single years of age is calculated by dividing the estimated migration rate based on school enrollment data for the year of the census (from equation 19) by the implied census migration rate for the population ages 6 to 14 from each state (from equation 22) (equation 24).

(24) $CF_{CensusNMRT(6\text{-}14)} = NMR_{T(6\text{-}14)2000}/ NMR_{T(6\text{-}14)1995\text{-}2000}$

18. The final correction factor for the migration rates of the populations of each state ages 17 to 64 by single years of age is calculated by multiplying the implied migration rate from the census for that age group (from 23) by the correction factor (from 24) (equation 25).

(25) $CF_{CensusNMRA(17\text{-}64)} = CF_{CensusNMRT(6\text{-}14)} * NMR_{A(17\text{-}64)1995\text{-}2000}$

19. Migration rates for each estimate period for the populations of each state ages 17 to 64 by single years of age are calculated by multiplying the correction factor (from equation 25) by the migration rate for the

population ages 6.5 to 14.5 of each estimate period (from equation 19) (equation 26).

(26) $NMR_{A(17-64)P} = NMR_{T(6-14)P} * CF_{CensusNMRA(17-64)}$

20. The mid-period civilian populations is then calculated as follows (equation 27):

(27) $POP_{A(17-64)P} = POP_{A(17-64)Y} - POP_{AFA(17-64)Y} - .5\,DTH_{A(17-64)P} - .5NMove_{AFA17-64SP}$

a. Subtract the cohortized Armed Forces base population (see the section "Step 2: The Armed Forces Population" - below) from the corresponding cohortized population for the resident population (see the section on "The Base Population and Births" above).
b. Subtract one-half the number of the cohortized deaths to the civilian population of these ages (see the section on "Deaths" above).
c. Subtract one-half the net movement into and out of the Armed Forces. This net movement is simply the difference between the national station strength in the estimate year and the national station strength in the census year less the number of deaths to Armed Forces personnel in that period (equation 28).

(28) $NMOVE_{StAFA17-64SP} = POP_{StAF17-64BY} - POP_{StAF17-64B42000} - DTH_{StAFA17-64SP}$

21. Finally, the number of net migrants for each estimate period for the civilian populations of each state ages 17 to 64 by single years of age are estimated by multiplying the corresponding migration rate (from equation 26) by an estimate of the civilian population as of the middle of each estimation period (equation 29).

(29) $NM_{A(17-64)P} = NMR_{A(17-64)P} * POP_{A(17-64)P}$

At the end of these steps, the result is one set of estimates of civilian net migration by single years of age for each state and each point for which estimates are produced (e.g., for the 2005 vintage estimates, there will be six sets of net-migration, one each for the periods 4/1/00 to 6/30/00, 4/1/00-6/30/01, 4/1/00-6/30/02, 4/1/00-6/30/03, 4/1/00-6/30/04, and 4/1/00-6/30/05)

- **1D. Calculating the Population 0 to 64**

The result of the above procedures is civilian age estimates without sex detail. Sex detail originates from the following steps:

a. The 2000 census proportion of male civilian population is calculated for each year of age by State;
b. National sex ratios by single years of age are calculated for both the 2000 census civilian population and for each estimate year;
c. The change in the national sex ratios between the estimate year and the census base year are used to update the 2000 State ratios; and
d. These are applied to the State single-year civilian population estimates for both sexes to obtain civilian sex detail by age.

Step 2: Estimating the Armed Forces population ages 17 to 64.

In this technique, the Armed Forces population at each age is estimated using a distributed administrative records technique. The data sources for this procedure are as follows:

- State total Armed Forces population from Armed Forces registries (from the state-county totals estimates team);
- National resident Armed Forces population by single years of age and sex for each estimate-year from the current vintage of the national estimates.

The state Armed Forces population by single years of age and sex is then calculated by distributing the total Armed Forces population for each estimate period by age and sex using the distribution from the National resident Armed Forces population by single years of age and sex from the corresponding estimate period (equation 30).

(30) $POP_{AFA(17-64)SY} = POP_{AFT(17-64)SY} * (POP_{NaAFA(17-64)SY} / POP_{NaAFT(17-64)SY})$

At the end of this procedure, the result is one set of estimates of the state Armed Forces population by single years of age and sex for each state and time point for which estimates are produced (e.g., for the 2005 vintage estimates, there will be six estimated populations, one each for 7/1/00, 7/1/01, 7/1/02, 7/1/03, 7/1/04 and 7/1/05.

Step 3: Estimating the population age 65 and over.

In this technique, the population ages 65 and over by age and sex is estimated using an administrative records difference technique. The data sources for this procedure are as follows:

- State Medicare enrollment totals;

- State Medicare enrollment by 5-year age groups and sex;
- State population age 65 and older by single years of age and sex for the base year from the most recent census.
- National population age 65 and older by single years of age and sex for each estimate-year from the current vintage of the national estimates;
- State total populations age 65 and older for each estimate year.

The state populations age 65 and older by single-years of age and sex are then calculated in the following manner:

1. Estimates of Medicare enrollment for the years for which estimates are desired but for which no data are available are extrapolated using the assumption of a logistic growth curve (equation 31).

(31) $POP_{Med5A(65to85+)S7YYYY} = \ln(POP_{Med5A(65to85+)S7YYYY-1}/POP_{Med5A(65to85+)S7YYYY-2}) * POP_{Med5A(65to85+)S7YYYY-1}$

2. The Medicare enrollment by 5-year age groups and sex from Medicare registries is proportionally adjusted to the state Medicare enrollment totals (equation 32);

(32) $POP'_{Med5A(65to85+)SY} = POP_{Med5A(65to85+)SY} * (POP_{MedT(65to85+)Y}/POP_{NaMedT(65to85+)Y})$

3. The proportionally-adjusted Medicare enrollment by 5-year age groups and sex (from equation 32) is distributed to single years of age using the distribution from the state populations from the census for the appropriate age-sex group (equation 33);

(33) $POP_{MedA(65to85+)SY} = POP'_{Med5A(65to85+)SY} * (POP_{MedA(65to85+)S42000}/POP_{T(65to85+)S42000})$

4. The difference between the Medicare enrollment figure in the base year and that in the estimate year is calculated (equation 34);

(34) $Diff_{MedA(65to85+)SY)} = POP_{MedA(65to85+)SY,YYYY} - POP_{MedA(65to85+)SY,Base}$

5. A new estimate of the population ages 65 and older by single years of age and sex is calculated by adding the difference in the Medicare data by single years of age and sex (from equation 34) to a cohortized base population from the census (equation 35).

(35) $POP_{StResASY} = POP_{StResASBase} + Diff_{MedA(65to85+)SY)}$

6. The result is proportionally adjusted concurrently to the national population by age and sex and the state total populations age 65 and older for each estimate year.

At the end of these steps, the result is one set of estimates of the population ages 65 and older by single years of age and sex for each state and each time point for which estimates are produced (e.g., for the 2005 vintage estimates, there will be six estimated populations, one each for 7/1/00, 7/1/01, 7/1/02, 7/1/03, 7/1/04, and 7/1/05).

Step 4: Proportional allocation.

The final steps in the component method for age are to:

a. Adjust each age-sex cell (0 to 64) to an independent national civilian population estimate;
b. Further adjust each age-sex cell within a State to the civilian state population total;
c. Add estimate of Armed Forces by age and sex to the civilian population to produce resident population.

At the end of these steps, the result is one set of estimates of the population by single years of age to 85+ and sex for each state and each time point for which estimates are produced (e.g., for the 2005 vintage estimates, there will be six estimated populations [7/1/00, 7/1/01, 7/1/02, 7/1/03, 7/1/04, and 7/1/05]).

Appendix A: Equation Symbol Key

- POP = Population
- CPOP = Cohortized Population
- DTH = Deaths
- CDTH = Cohortized Deaths
- BTH = Births
- NM = Net Migrants
- CNM = Cohortized Net Migrants
- NMR = Net Migration Rate
- CF = Correction Factor

Subscripts (in order of appearance):

1. Geography
    a. St = State
    b. Na = National
    c. Wd = World
2. Universe

a. Res = Resident
b. Civ = Civilian
c. AF = Armed Forces by station
d. PS = Armed Forces by preservice residence
e. Med = Medicare
f. SE = School Enrollment

3. Age
    a. T(AA-AA) = All Ages from age AA to age AA.
    b. A(AA-AA) = By single years of age from age AA to age AA.
    c. 5A(AA-AA) = By five-year age groups from age AA to age AA.
4. Sex
    a. M = Males
    b. F = Females
    c. Sx = By Sex (males and females)
5. Time period (Month/Year):
    a. For Population
        i. MYYYY = The first day of month M in year YYYY
        ii. Y = Year
    b. For Deaths and Net Migrants
        i. 72000 = 4/1/00 to 6/30/00
        ii. 72001 = 7/1/00 to 6/30/01
        iii. 72002 = 7/1/01 to 6/30/02
        iv. 72003 = 7/1/02 to 6/30/03
        v. P = Period

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[1] A key to the symbols used in the equations in this document can be found in Appendix A. Specific definitions of the components in each equation were excluded and textual descriptions were included in an attempt to provide a clear and concise presentation. The components in the equations will have the following characteristics unless otherwise noted: Geography = State, Universe = Resident, and Sex = Both Sexes.

[2] Projected state births, the production of which is not a direct part of the state age-sex estimates process, are nonetheless created in a two-step process. First, the number of national births by sex is projected using age-specific fertility rates derived from the most recently available vital statistics data and population estimates. Second, these births are distributed to states using the distribution from the most recently available vital statistics

[3] Projected state deaths by single years of age, the production of which is not a direct part of the state age-sex estimates process, are nonetheless created in a two-step process. First, the number of national deaths by age and sex is

projected using central death rates derived from the most recently available vital statistics data and population estimates. Second, these deaths are distributed to states using the distribution from the most recently available vital statistics.

[4] Projected state deaths by month and age, the production of which is not a direct part of the state age-sex estimates process, are nonetheless created by interpolating between the yearly state deaths described in step 1B (above).

[5] School enrollment data is associated with a given year as opposed to a month and year.